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(12) **United States Patent**
Spears

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(45) **Date of Patent: Aug. 13, 2013**

(54) **SYSTEMS AND METHODS FOR WORD OFFENSIVENESS PROCESSING USING AGGREGATED OFFENSIVE WORD FILTERS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 790 days.

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(65) **Prior Publication Data**

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(51) **Int. Cl.**
G06F 17/27 (2006.01)
G06F 17/21 (2006.01)
G10L 21/00 (2006.01)

(52) **U.S. Cl.**
USPC ... **704/9**; 704/1; 704/10; 704/270; 704/270.1; 704/275

(58) **Field of Classification Search**
USPC 704/9, 4, 1, 10, 270, 270.1, 275; 715/271, 267, 260, 257, 256, 255; 707/754, 707/737
See application file for complete search history.

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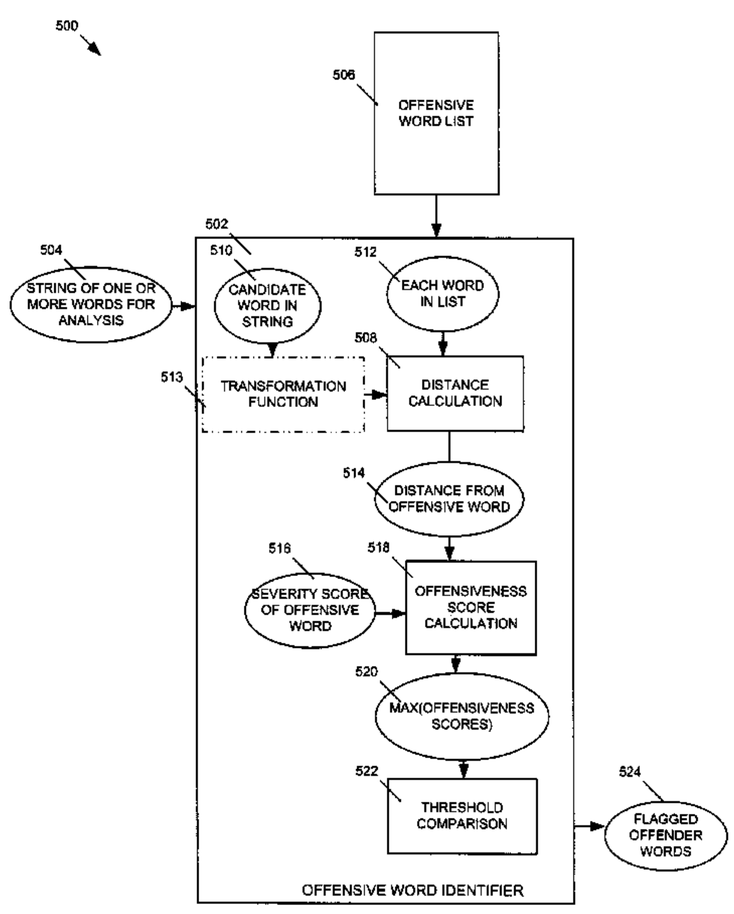
Primary Examiner — Edgar Guerra-Erazo
(74) *Attorney, Agent, or Firm* — Jones Day

(57) **ABSTRACT**

Computer-implemented systems and methods are provided for identifying language that would be considered obscene or otherwise offensive to a user or proprietor of a system. A first plurality of offensive words are received, and a second plurality of offensive words are received. A string of words are received, where one or more detected offensive words are selected from the string of words that matches words from the first plurality of offensive words or the second plurality of offensive words. The string of words is processed based upon the detection of offensive words in the string of words.

31 Claims, 14 Drawing Sheets



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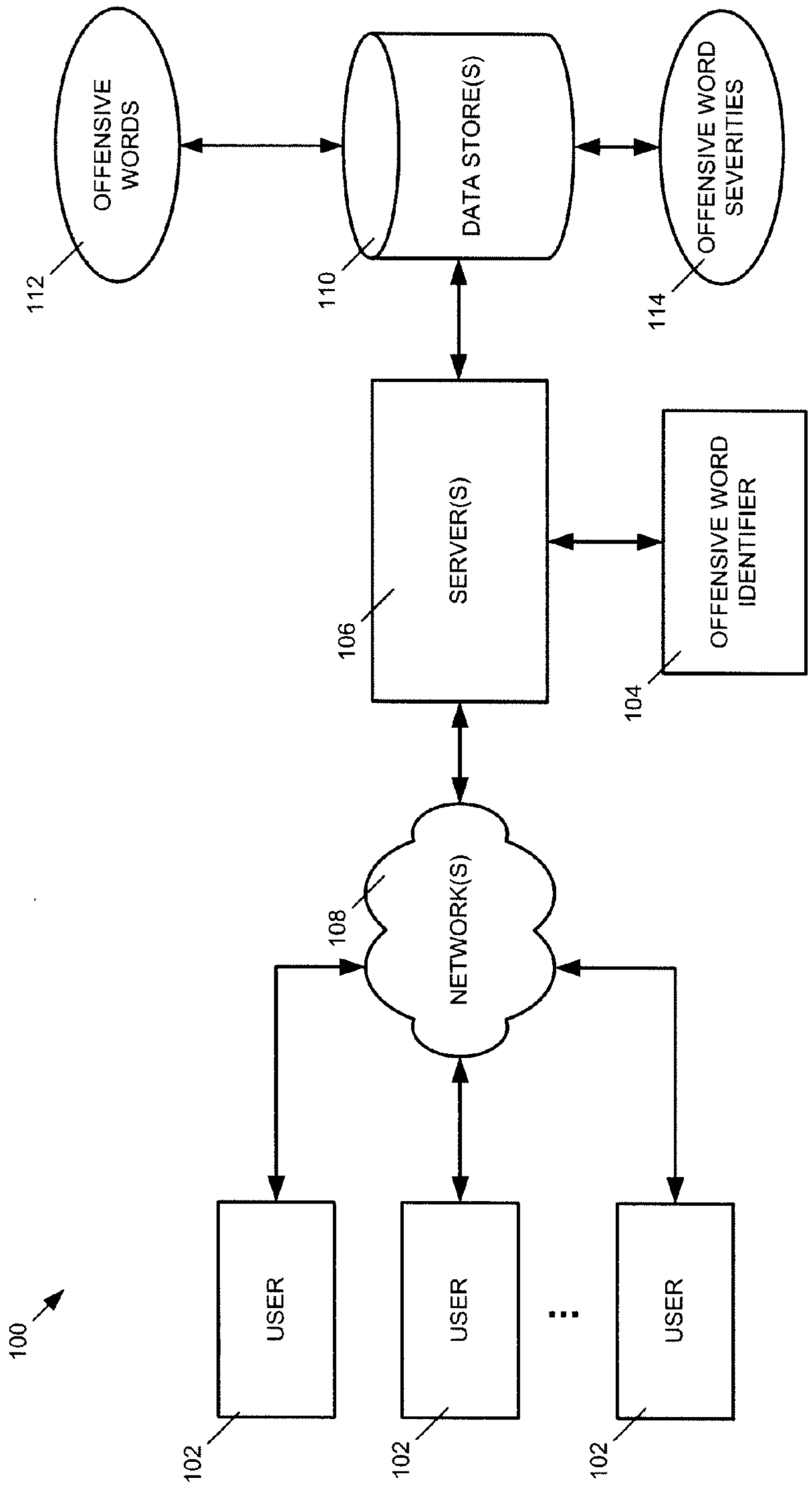

OFFENSIVE WORDS
112
DATA STORE(S)
110
OFFENSIVE WORD SEVERITIES
114
SERVER(S)
106
OFFENSIVE WORD IDENTIFIER
104
NETWORK(S)
108
USER
102
USER
102
USER
102
100

FIG. 1

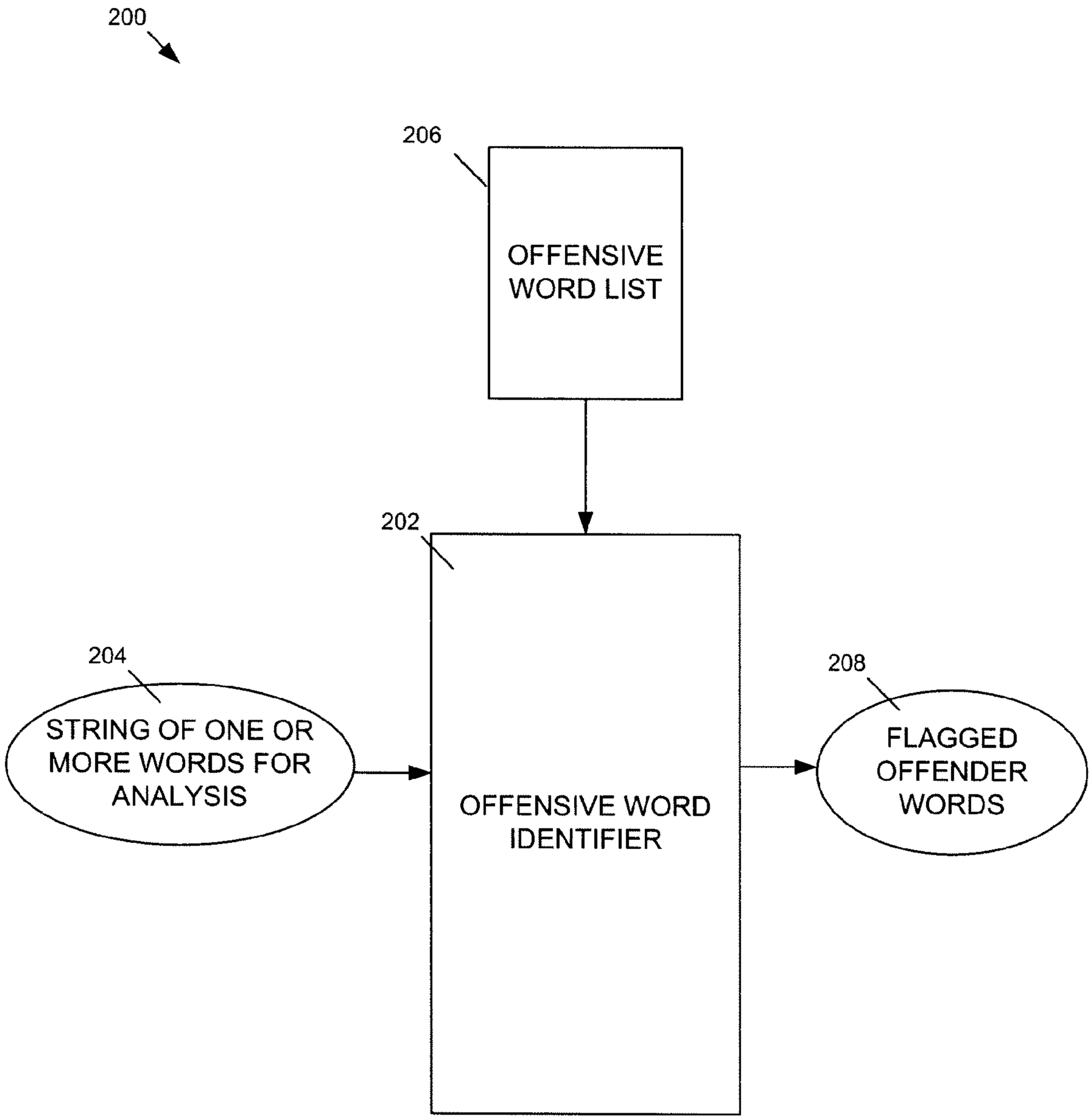

200
206
OFFENSIVE WORD LIST
202
204
STRING OF ONE OR MORE WORDS FOR ANALYSIS
OFFENSIVE WORD IDENTIFIER
208
FLAGGED OFFENDER WORDS

FIG. 2

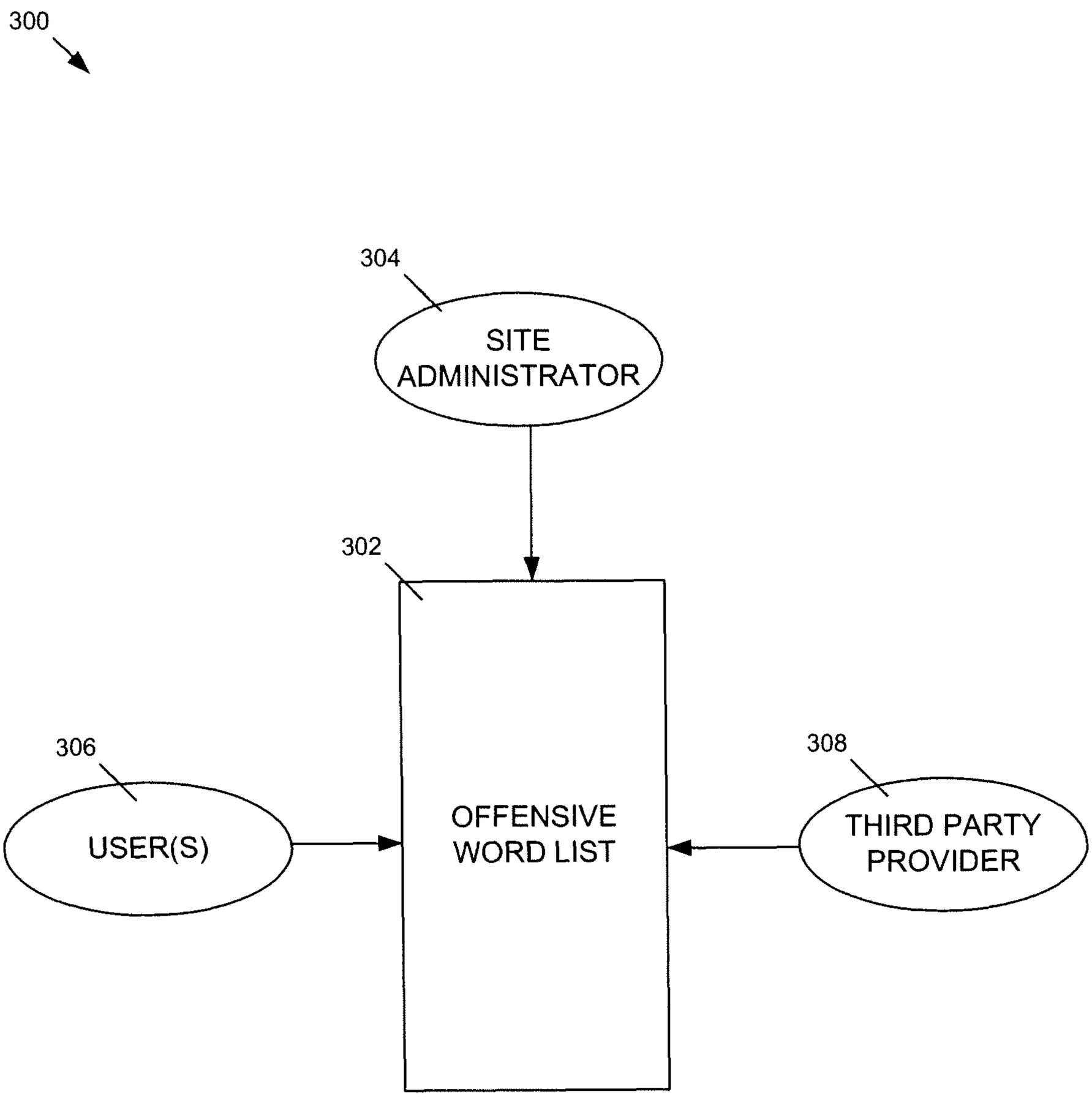

300
304
SITE ADMINISTRATOR
302
306
USER(S)
OFFENSIVE WORD LIST
308
THIRD PARTY PROVIDER

FIG. 3

402

WORD	SEVERITY SCORE
WORD_1	8
WORD_2	5
WORD_3	10
WORD_4	2
WORD_5	7
WORD_6	8
WORD_7	4

OFFENSIVE WORD LIST

FIG. 4A

404

WORD	UNDERSTOOD SEVERITY SCORE
WORD_1	(1)
WORD_2	(1)
WORD_3	(1)
WORD_4	(1)
WORD_5	(1)
WORD_6	(1)
WORD_7	(1)

OFFENSIVE WORD LIST

FIG. 4B

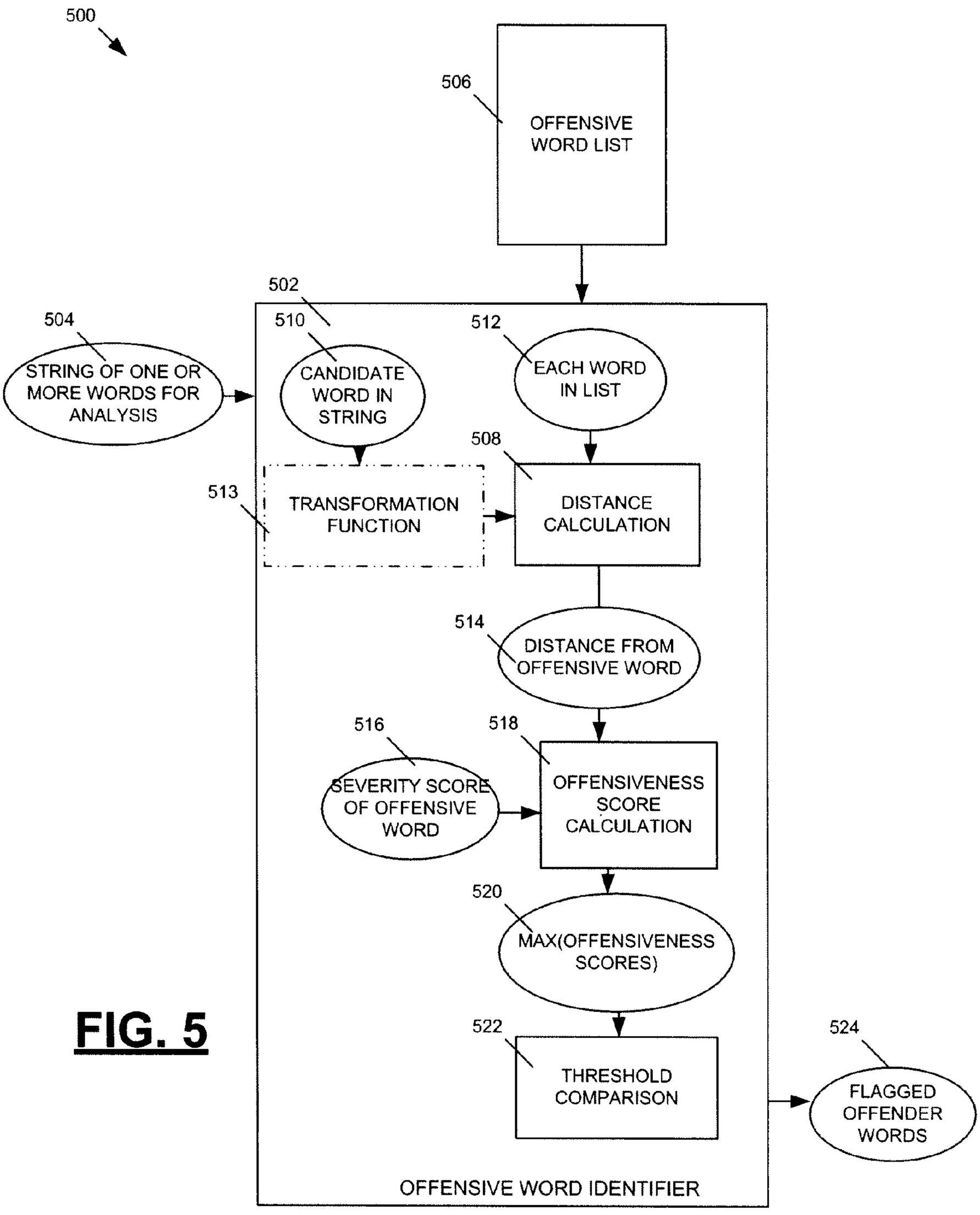

500
506
OFFENSIVE WORD LIST
502
504
STRING OF ONE OR MORE WORDS FOR ANALYSIS
510
CANDIDATE WORD IN STRING
512
EACH WORD IN LIST
508
513
TRANSFORMATION FUNCTION
DISTANCE CALCULATION
514
DISTANCE FROM OFFENSIVE WORD
516
518
SEVERITY SCORE OF OFFENSIVE WORD
OFFENSIVENESS SCORE CALCULATION
520
MAX(OFFENSIVENESS SCORES)
522
THRESHOLD COMPARISON
524
FLAGGED OFFENDER WORDS
OFFENSIVE WORD IDENTIFIER

FIG. 5

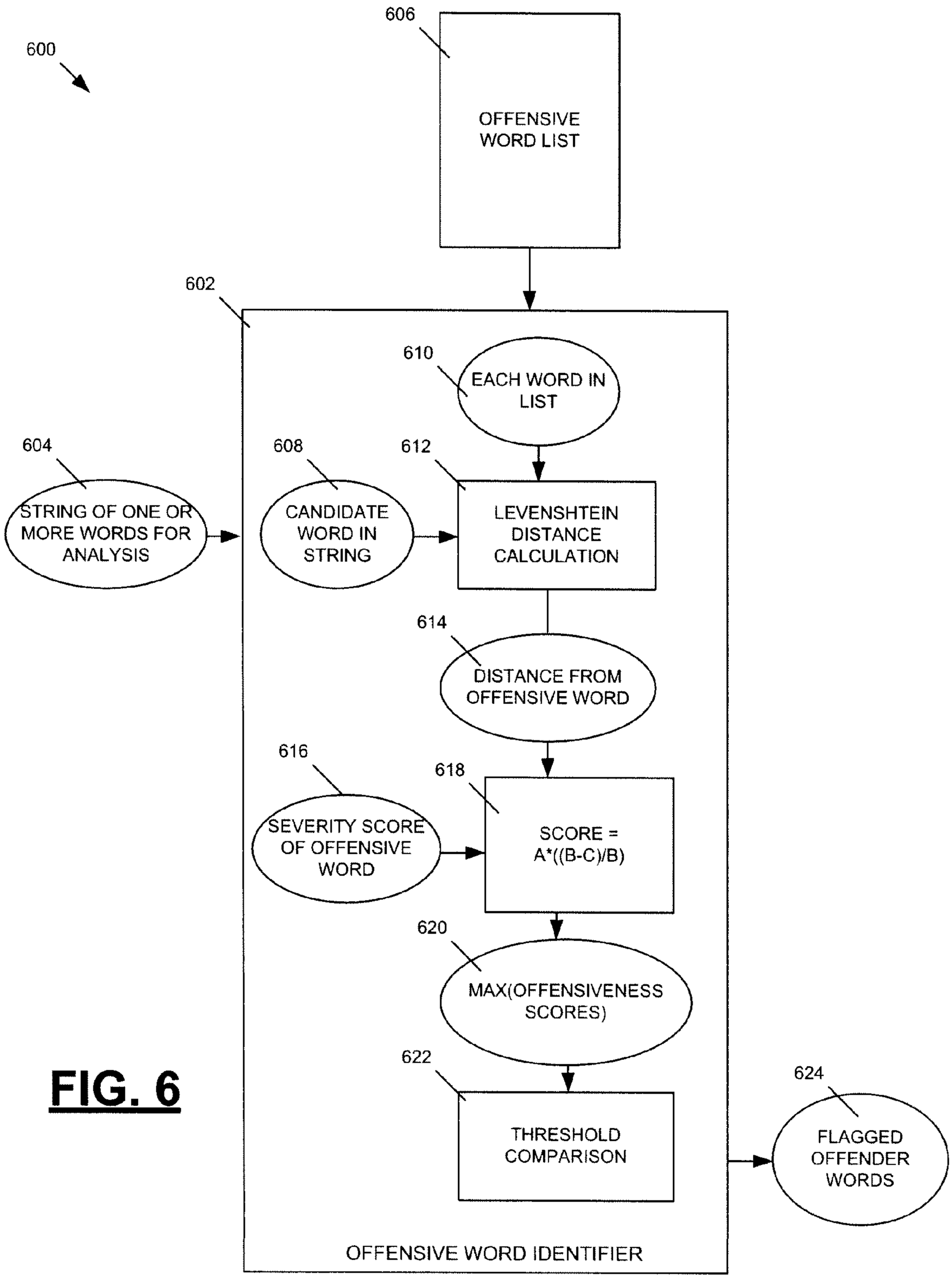

600
606
OFFENSIVE WORD LIST
602
610
EACH WORD IN LIST
604
STRING OF ONE OR MORE WORDS FOR ANALYSIS
608
CANDIDATE WORD IN STRING
612
LEVENSHTEIN DISTANCE CALCULATION
614
DISTANCE FROM OFFENSIVE WORD
616
SEVERITY SCORE OF OFFENSIVE WORD
618
SCORE = A*((B-C)/B)
620
MAX(OFFENSIVENESS SCORES)
622
THRESHOLD COMPARISON
624
FLAGGED OFFENDER WORDS
OFFENSIVE WORD IDENTIFIER

FIG. 6

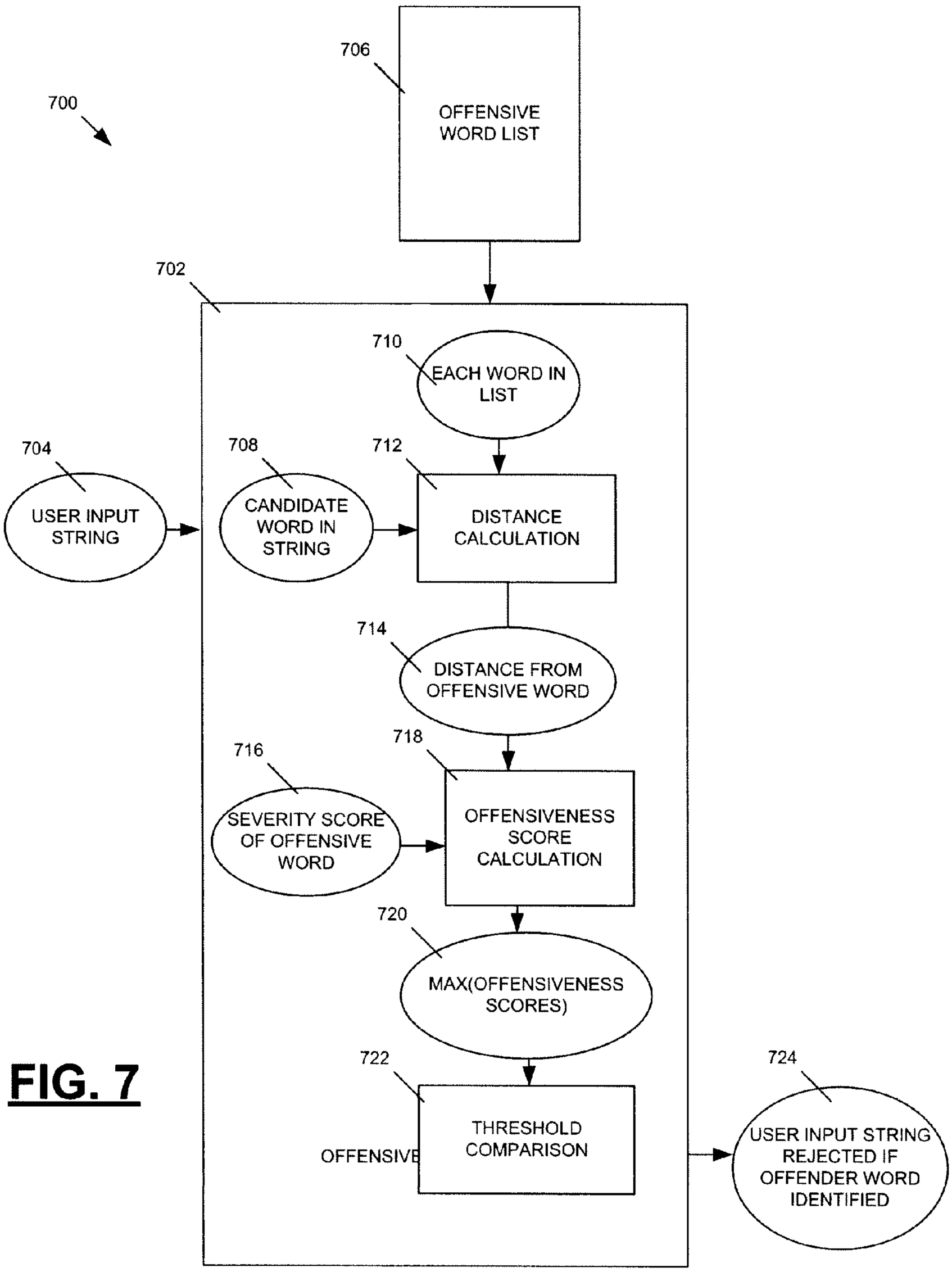

700
706
OFFENSIVE WORD LIST
702
710
EACH WORD IN LIST
704
USER INPUT STRING
708
CANDIDATE WORD IN STRING
712
DISTANCE CALCULATION
714
DISTANCE FROM OFFENSIVE WORD
716
SEVERITY SCORE OF OFFENSIVE WORD
718
OFFENSIVENESS SCORE CALCULATION
720
MAX(OFFENSIVENESS SCORES)
722
OFFENSIVE
THRESHOLD COMPARISON
724
USER INPUT STRING REJECTED IF OFFENDER WORD IDENTIFIED

FIG. 7

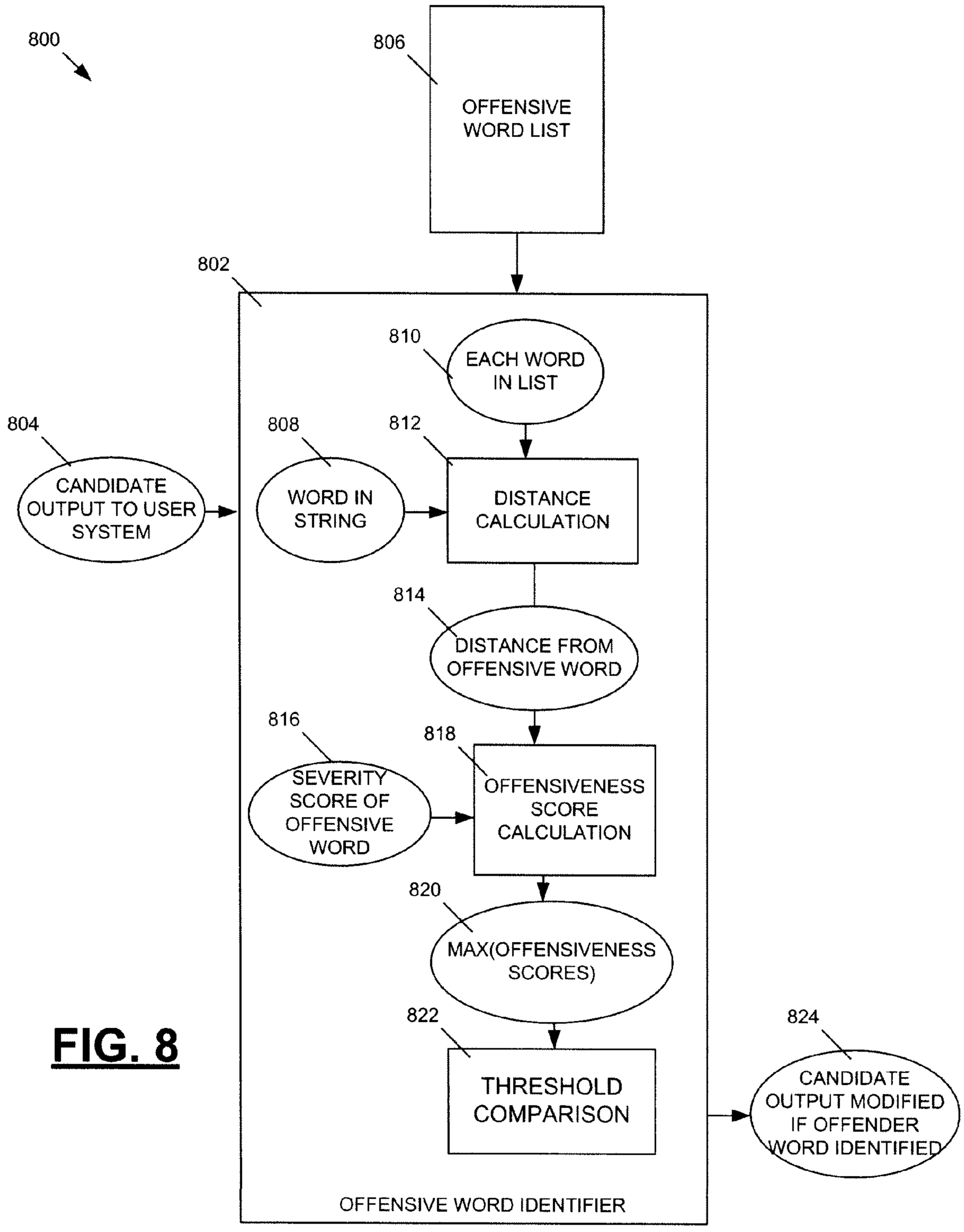

800
806
OFFENSIVE WORD LIST
802
810
EACH WORD IN LIST
804
CANDIDATE OUTPUT TO USER SYSTEM
808
WORD IN STRING
812
DISTANCE CALCULATION
814
DISTANCE FROM OFFENSIVE WORD
816
SEVERITY SCORE OF OFFENSIVE WORD
818
OFFENSIVENESS SCORE CALCULATION
820
MAX(OFFENSIVENESS SCORES)
822
THRESHOLD COMPARISON
824
CANDIDATE OUTPUT MODIFIED IF OFFENDER WORD IDENTIFIED
OFFENSIVE WORD IDENTIFIER

FIG. 8

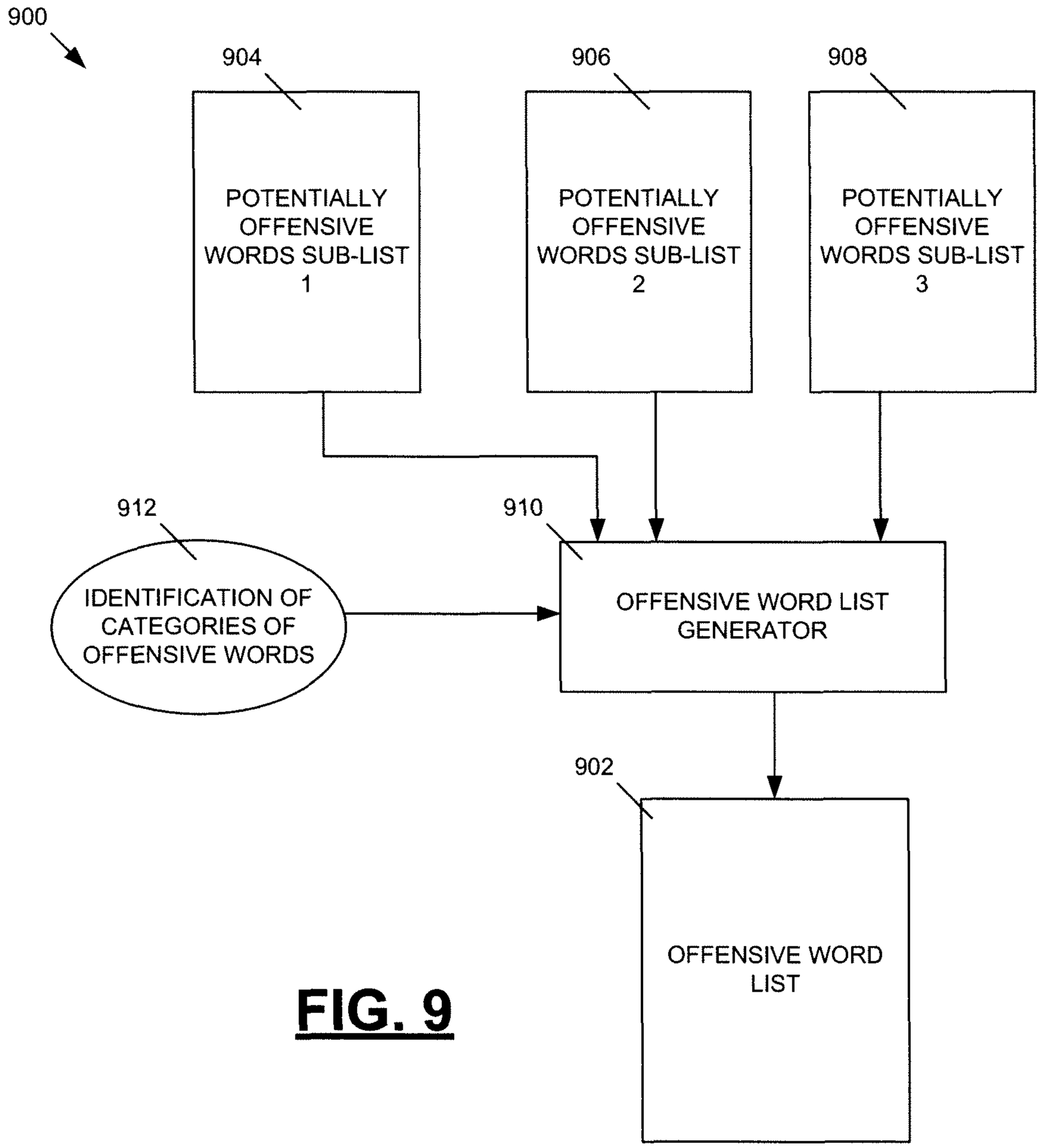
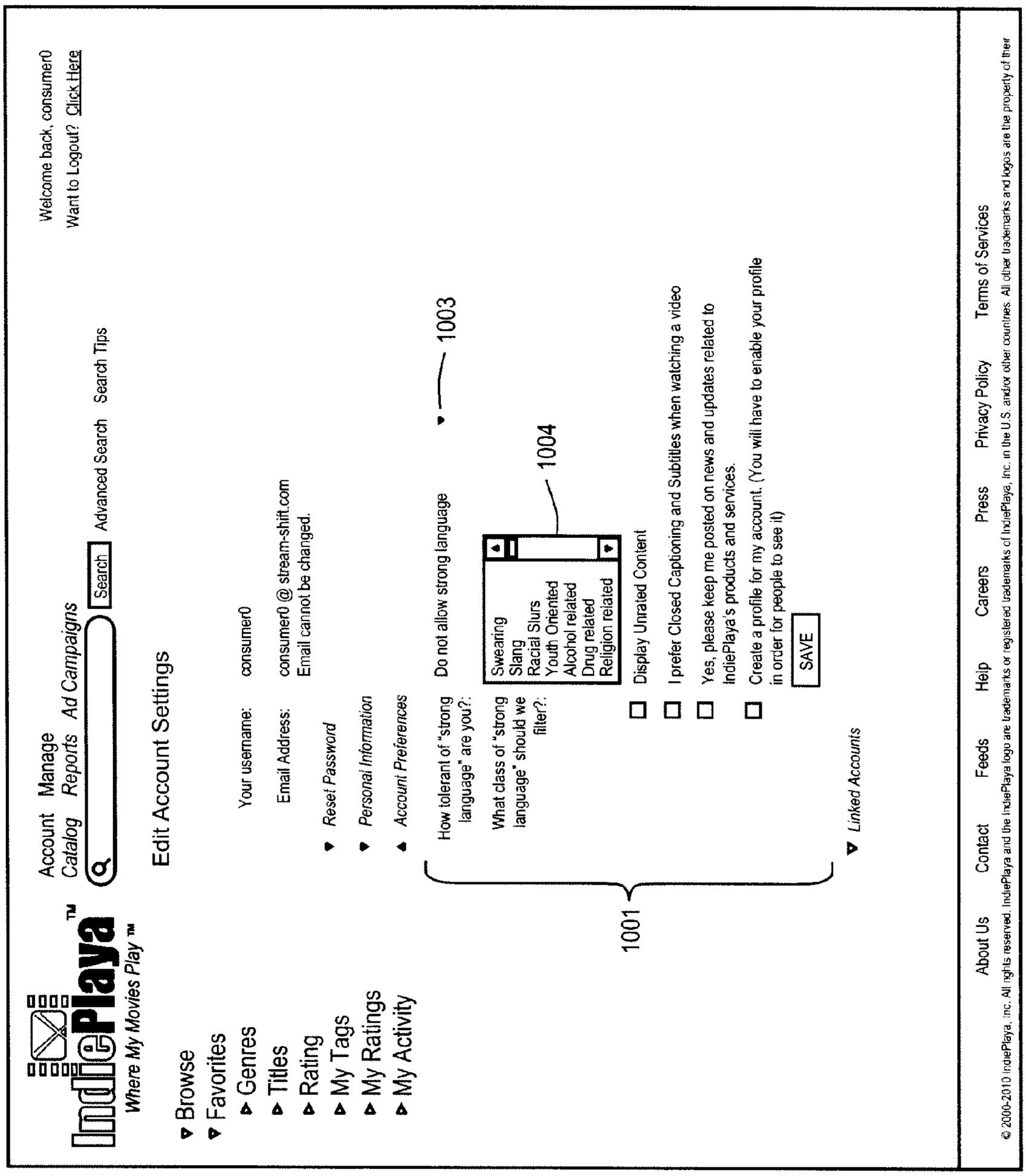

900
904
POTENTIALLY OFFENSIVE WORDS SUB-LIST 1
906
POTENTIALLY OFFENSIVE WORDS SUB-LIST 2
908
POTENTIALLY OFFENSIVE WORDS SUB-LIST 3
912
IDENTIFICATION OF CATEGORIES OF OFFENSIVE WORDS
910
OFFENSIVE WORD LIST GENERATOR
902
OFFENSIVE WORD LIST

FIG. 9


IndiePlaya™
Where My Movies Play™
Welcome back, consumer0
Want to Logout? Click Here
Account Manage
Catalog Reports Ad Campaigns
Search
Advanced Search Search Tips
Edit Account Settings
Your username: consumer0
Email Address: consumer0 @ stream-shift.com
Email cannot be changed.
Reset Password
Personal Information
Account Preferences
How tolerant of "strong language" are you?:
Do not allow strong language
What class of "strong language" should we filter?:
Swearing
Slang
Racial Slurs
Youth Oriented
Alcohol related
Drug related
Religion related
Display Unrated Content
I prefer Closed Captioning and Subtitles when watching a video
Yes, please keep me posted on news and updates related to IndiePlaya's products and services.
Create a profile for my account. (You will have to enable your profile in order for people to see it)
SAVE
Linked Accounts
Browse
Favorites
Genres
Titles
Rating
My Tags
My Ratings
My Activity
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1001
1003
1004
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FIG. 10

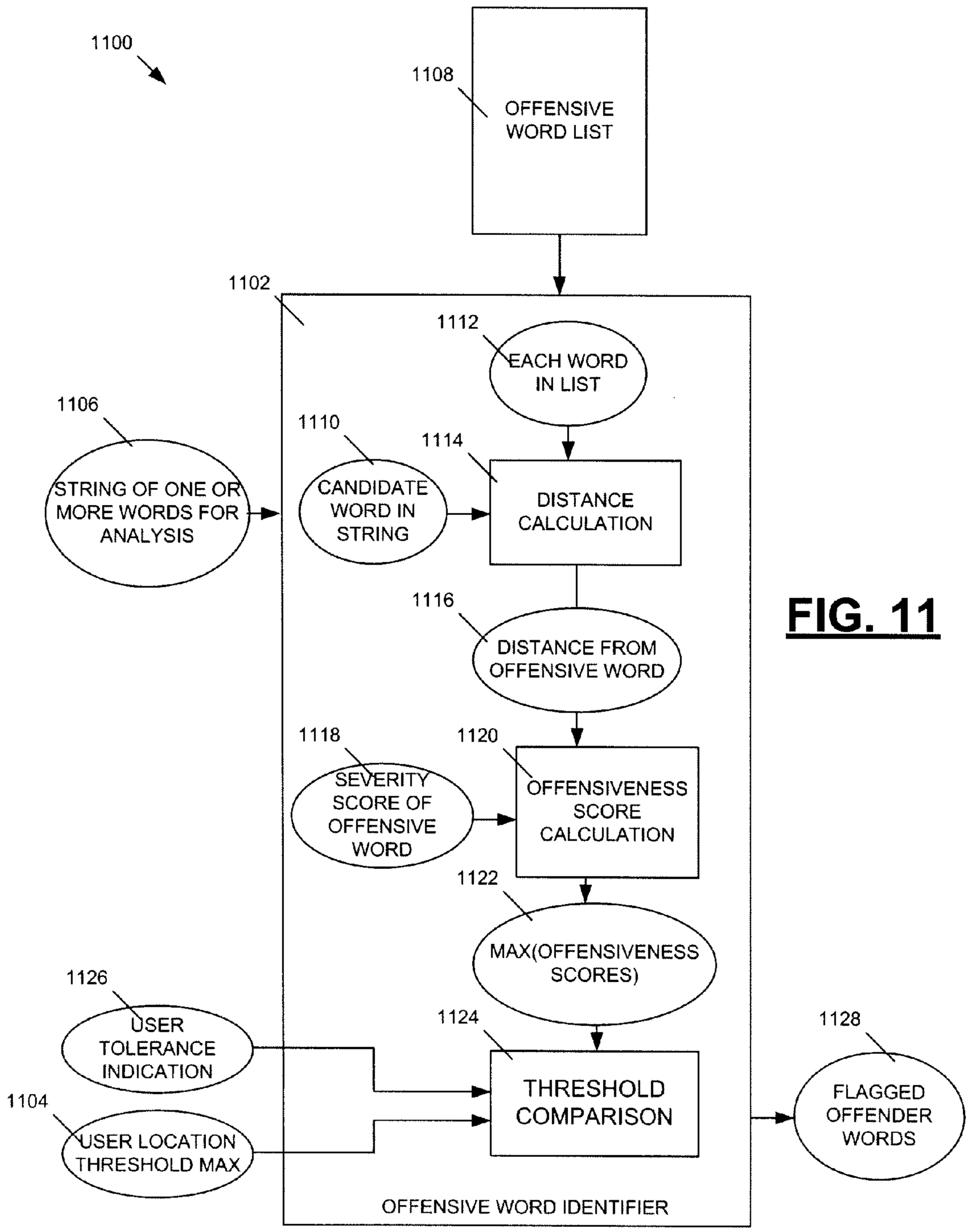
1100
1108
OFFENSIVE WORD LIST
1102
1112
EACH WORD IN LIST
1106
STRING OF ONE OR MORE WORDS FOR ANALYSIS
1110
CANDIDATE WORD IN STRING
1114
DISTANCE CALCULATION
1116
DISTANCE FROM OFFENSIVE WORD
1118
SEVERITY SCORE OF OFFENSIVE WORD
1120
OFFENSIVENESS SCORE CALCULATION
1122
MAX(OFFENSIVENESS SCORES)
1126
USER TOLERANCE INDICATION
1124
THRESHOLD COMPARISON
1128
FLAGGED OFFENDER WORDS
1104
USER LOCATION THRESHOLD MAX
OFFENSIVE WORD IDENTIFIER

FIG. 11

FIG. 12

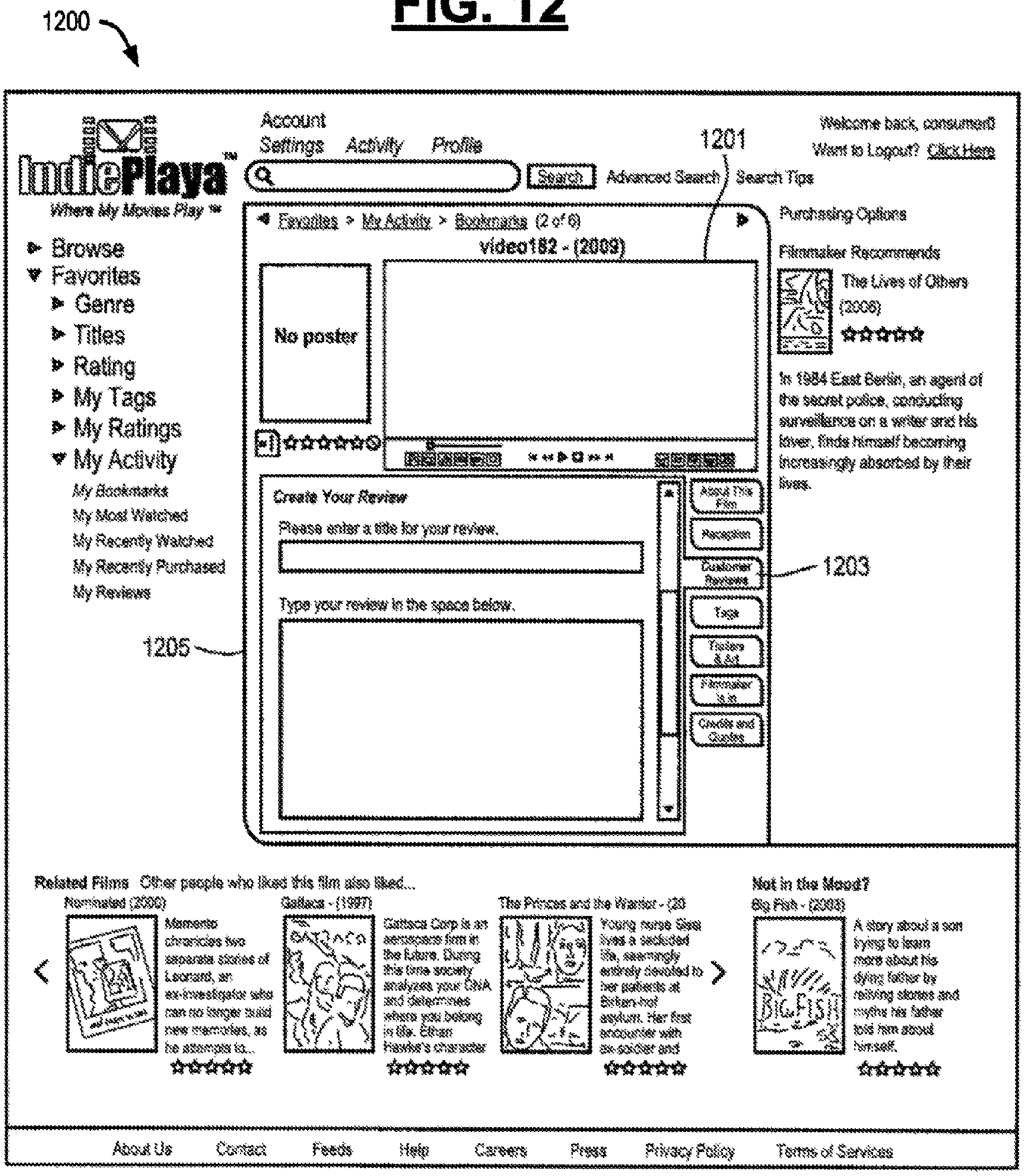
1200
IndiePlaya
Where My Movies Play
Account
Settings Activity Profile
Search
Advanced Search
Search Tips
1201
Welcome back, consumer!
Want to Logout? Click Here
Favorites > My Activity > Bookmarks (2 of 6)
video182 - (2009)
No poster
Purchasing Options
Filmmaker Recommends
The Lives of Others (2006)
In 1984 East Berlin, an agent of the secret police, conducting surveillance on a writer and his lover, finds himself becoming increasingly absorbed by their lives.
Browse
Favorites
Genre
Titles
Rating
My Tags
My Ratings
My Activity
My Bookmarks
My Most Watched
My Recently Watched
My Recently Purchased
My Reviews
Create Your Review
Please enter a title for your review.
Type your review in the space below.
1205
1203
About This Film
Reception
Customer Reviews
Tags
Trailers & Ads
Filmmaker Info
Goodies and Quotes
Related Films Other people who liked this film also liked...
Nominated (2000)
Memento chronicles two separate stories of Leonard, an ex-investigator who can no longer build new memories, as he attempts to...
Gattaca - (1997)
Gattaca Corp is an aerospace firm in the future. During this time society analyzes your DNA and determines where you belong in life. Ethan Hawke's character
The Prince and the Warrior - (20
Young nurse Sissi lives a secluded life, seemingly entirely devoted to her patients at Sirtam mid asylum. Her first encounter with ex-soldier and
Not in the Mood?
Big Fish - (2003)
A story about a son trying to learn more about his dying father by reliving stories and myths his father told him about himself.
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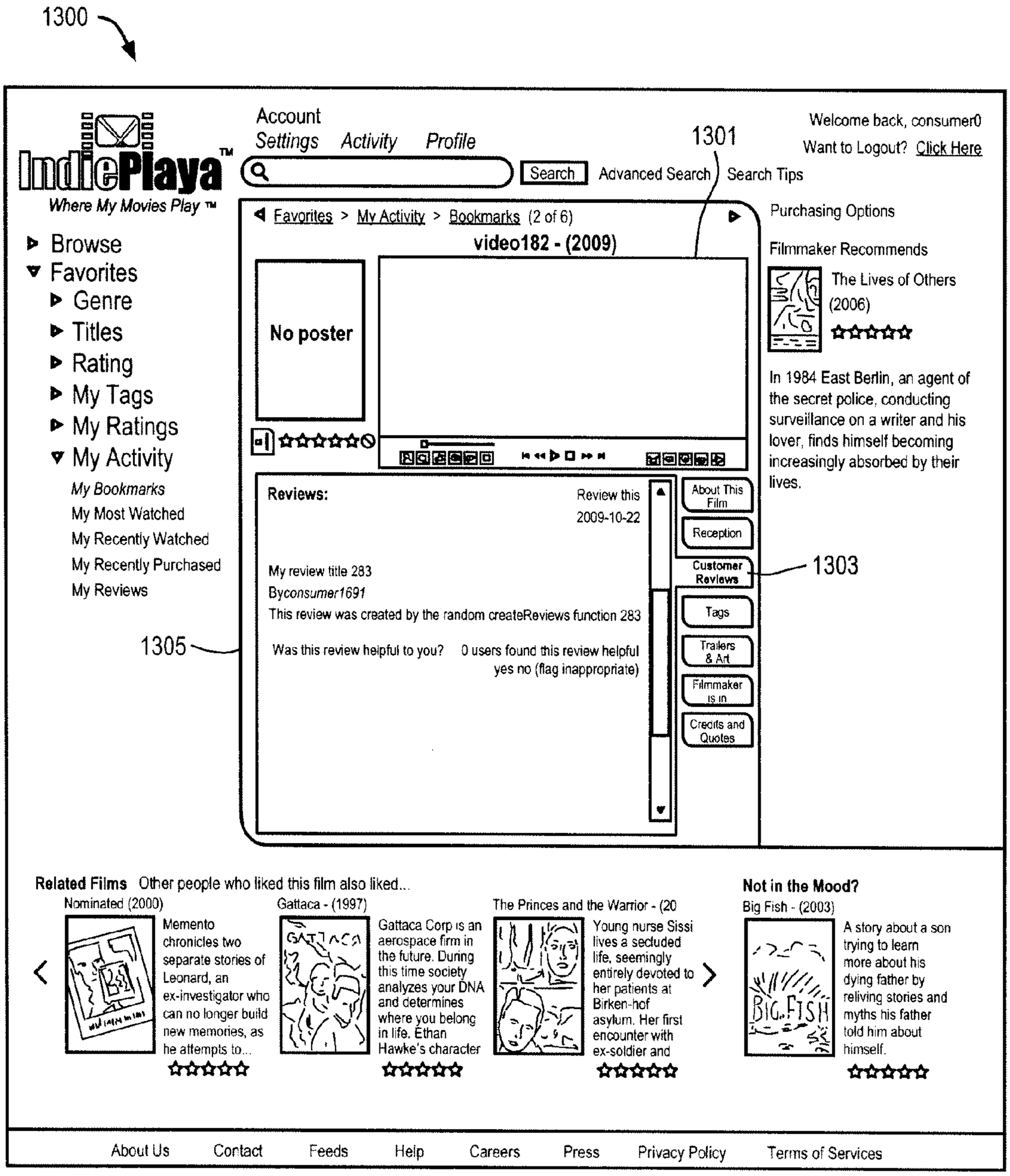
FIG. 13


1300
IndiePlaya™
Where My Movies Play ™
Account
Settings Activity Profile
Search
Advanced Search
Search Tips
1301
Welcome back, consumer0
Want to Logout? Click Here
Browse
Favorites
Genre
Titles
Rating
My Tags
My Ratings
My Activity
My Bookmarks
My Most Watched
My Recently Watched
My Recently Purchased
My Reviews
Favorites > My Activity > Bookmarks (2 of 6)
video182 - (2009)
No poster
Reviews:
Review this
2009-10-22
My review title 283
By consumer1691
This review was created by the random createReviews function 283
Was this review helpful to you? 0 users found this review helpful
yes no (flag inappropriate)
1305
About This Film
Reception
Customer Reviews
1303
Tags
Trailers & Art
Filmmaker is in
Credits and Quotes
Purchasing Options
Filmmaker Recommends
The Lives of Others
(2006)
In 1984 East Berlin, an agent of the secret police, conducting surveillance on a writer and his lover, finds himself becoming increasingly absorbed by their lives.
Related Films Other people who liked this film also liked...
Nominated (2000)
Memento chronicles two separate stories of Leonard, an ex-investigator who can no longer build new memories, as he attempts to...
Gattaca - (1997)
Gattaca Corp is an aerospace firm in the future. During this time society analyzes your DNA and determines where you belong in life. Ethan Hawke's character
The Princes and the Warrior - (20
Young nurse Sissi lives a secluded life, seemingly entirely devoted to her patients at Birken-hof asylum. Her first encounter with ex-soldier and
Not in the Mood?
Big Fish - (2003)
A story about a son trying to learn more about his dying father by reliving stories and myths his father told him about himself.
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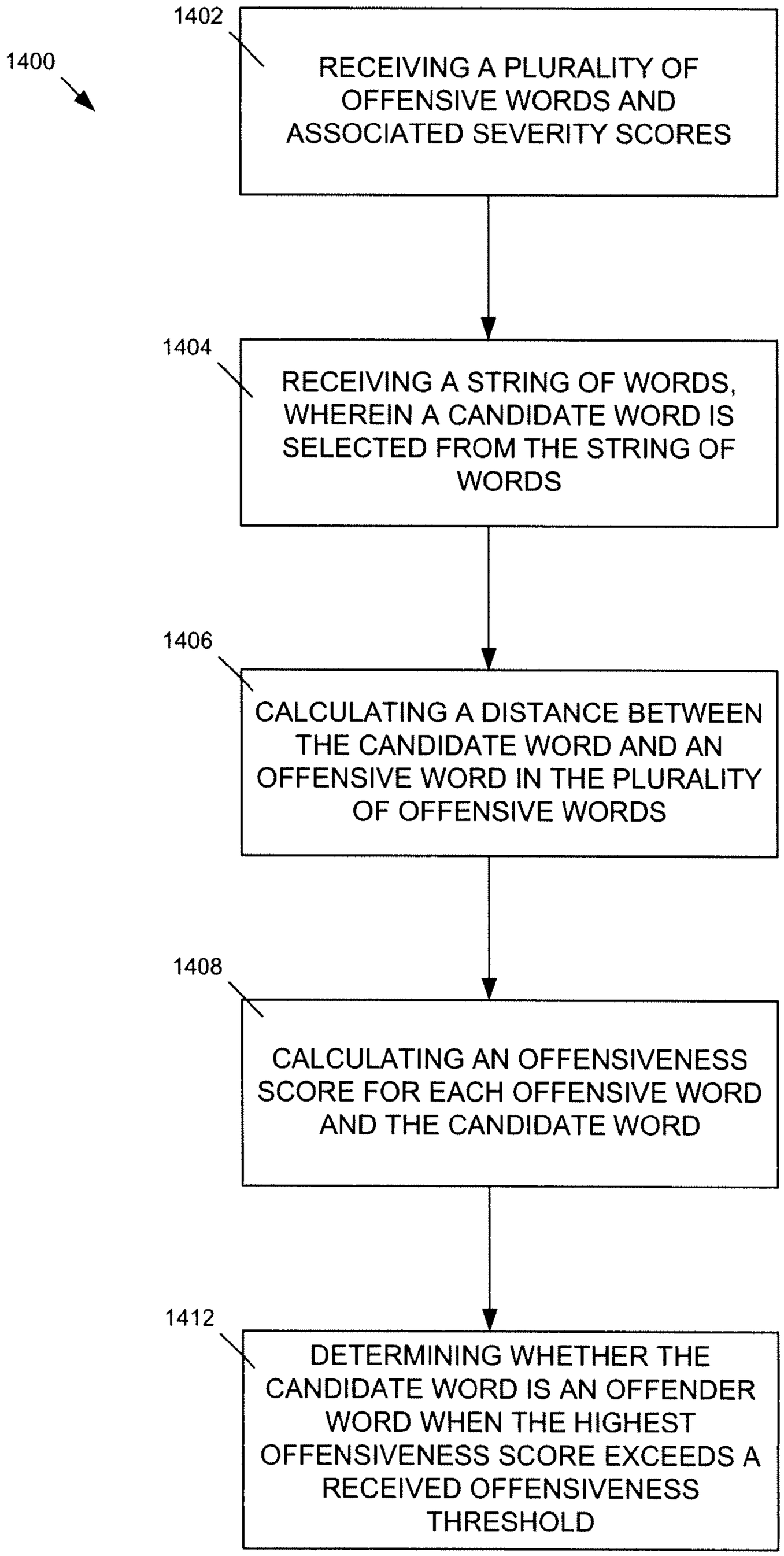
1400
1402
RECEIVING A PLURALITY OF OFFENSIVE WORDS AND ASSOCIATED SEVERITY SCORES
1404
RECEIVING A STRING OF WORDS, WHEREIN A CANDIDATE WORD IS SELECTED FROM THE STRING OF WORDS
1406
CALCULATING A DISTANCE BETWEEN THE CANDIDATE WORD AND AN OFFENSIVE WORD IN THE PLURALITY OF OFFENSIVE WORDS
1408
CALCULATING AN OFFENSIVENESS SCORE FOR EACH OFFENSIVE WORD AND THE CANDIDATE WORD
1412
DETERMINING WHETHER THE CANDIDATE WORD IS AN OFFENDER WORD WHEN THE HIGHEST OFFENSIVENESS SCORE EXCEEDS A RECEIVED OFFENSIVENESS THRESHOLD

FIG. 14

SYSTEMS AND METHODS FOR WORD OFFENSIVENESS PROCESSING USING AGGREGATED OFFENSIVE WORD FILTERS

TECHNICAL FIELD

The present disclosure relates generally to computer-implemented systems and methods for identifying language that would be considered offensive to a user or proprietor of a system.

BACKGROUND

Obscenity (in Latin, obscenus, meaning "foul, repulsive, detestable") is a term that is most often used to describe expressions (words, phrases, images, actions) that offend. The definition of obscenity differs from culture to culture, between communities within a single culture, and also between individuals within those communities.

Many cultures have produced laws to define what is considered to be obscene or otherwise offensive, and censorship is often used to try to suppress or control materials that fall under these definitions. Various countries have different standings on the types of materials that they, as legal bodies, permit their citizens to have access to and disseminate among their local populations. These countries' permissible content vary widely, with some having extreme punishment for members who violate the restrictions. However, while accessing these types of contents may result in punishment in one society, the content may be perfectly acceptable in another

SUMMARY

In accordance with the teachings provided herein, systems and methods for identifying language that would be considered obscene or otherwise offensive to a user or proprietor of a system are provided. For example, a system and method can be configured to receive, using one or more processors, a first plurality of offensive words and a second plurality of offensive words. A string of words may be received. The string of words is then compared to the first and second plurality of offensive words in order to determine if the string of words contains an offender word. The string of words is then processed based on the determination of the presence of an offender word based on the string of words.

A system and method may further be configured to associated a severity value with the offensive words which may then be used in conjunction with a offensiveness threshold value or function to determine if the string of words contain an offender word. A system and method may have as the source for the pluralities of offensive words, severity values and offensiveness thresholds any of a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated or any combination thereof.

A system and method may be configured so that a string of words may be modified by deleting the string of words such that the string of words is not displayed to the user or by censoring the string of words such that the offender word is not displayed. A system and method may also be configured so that a string of words may be rejected. A system and method may be configured so that some strings of words are rejected and others are modified based on an offensive word's membership to the first or second plurality of offensive words or the severity score of the offensive word as configured in either plurality.

As another example, computer-implemented systems and methods may include receiving a plurality of offensive words and receiving a second plurality of offensive words. A string of words may be received, where one or more detected offensive words are selected from the string of words that matches words from the plurality of offensive words or the second plurality of offensive words. The string of words may be processed based upon the detection of offensive words in the string of words.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** depicts a computer-implemented environment where users can interact with an offensive word identifier.

FIG. **2** is a block diagram depicting an offensive word identifier for identifying offensive words in a string of words.

FIG. **3** is a block diagram depicting example sources of an offensive word list or contributions to words on an offensive word list.

FIGS. **4**A and **4**B depict example offensive word lists.

FIG. **5** is a block diagram depicting selected details of an example offensive word identifier.

FIG. **6** is a block diagram depicting an offensive word identifier that utilizes a Levenshtein distance calculation.

FIG. **7** is a block diagram depicting an offensive word identifier being utilized as an input filter.

FIG. **8** is a block diagram depicting an offensive word identifier being utilized as an output filter.

FIG. **9** is a block diagram depicting the identification of words to be included on an offensive word list.

FIG. **10** is an example user interface where a user can select categories of words that the user considers offensive for generating an offensive word list and selecting an offensiveness threshold value.

FIG. **11** is a block diagram depicting an offensive word identifier that utilizes a user location threshold maximum in setting a threshold for flagging offender words

FIG. **12** depicts an example interface wherein an offensive word identifier may be utilized as an input filter.

FIG. **13** depicts an example user interface wherein an offensive word identifier may be utilized as an output filter.

FIG. **14** is a flow diagram depicting a method of identifying offender words in a string of words.

DETAILED DESCRIPTION

FIG. **1** depicts a computer-implemented environment where users **102** can interact with an offensive word identifier **104**. The offensive word identifier **104** provides a framework for mitigating language that is considered offensive by a reader or by a provider of a media forum. The content management system may be utilized in a variety of scenarios. For example, a message board operator may configure an offensiveness threshold for his message board. User message board posts may be parsed, with the words of the posts scrutinized against the offensiveness threshold, and posts that contain one or more terms that surpass the offensiveness threshold may be refused, modified to mitigate the offensiveness (e.g., the use of symbols may be used to sensor the offensive term: ####, @%^#, etc.), or otherwise mitigated.

In another example, a user of a system, such as a message board may configure an offensiveness threshold representing his personal sensitivity to offensive language. Content in message board postings that the user requests to view may then be scrutinized prior to the user being presented with the posts. Posts containing one or more terms that surpass the user's offensiveness threshold may be hidden from the user, a

warning may be presented including a link for the user to view the post that includes offensive language, or the post may be modified to mitigate the offensiveness, such as through the use of symbols to censor the objectionable terms. In a further example, an offensive word identifier **104** may be utilized on both input to and output from a system.

For example, in an online service that enables the posting of content reviews, such as reviews of newly released movies, the site proprietor may set one or more offensiveness thresholds to be applied (e.g., to user posts to the content review service). For example, the site proprietor may set a very low threshold for terms to be considered offensive in reviews for categories of movies containing themes appropriate for children (e.g., G-rated movies), while a higher offensiveness threshold may be set for categories of movies that include more adult themes (e.g., R-rated movies). Category offensiveness thresholds may then be applied to user reviews, where posts containing terms deemed offensive for that category may be refused or otherwise mitigated.

The input filters at the content review service may work in conjunction with one or more additional individual user offensiveness filter. Individual users may identify a personalized offensiveness threshold for their viewing experience. The text of content reviews to be presented to the user may then be scrutinized prior to the user being presented with the reviews. Posts containing one or more terms that surpass the user's offensiveness threshold may be hidden from the user or otherwise mitigated.

An offensiveness word identifier may be utilized in a number of other contexts as well. For example, on a social networking site, a user may be able to set an offensiveness threshold for terms in posts to their own "walls," while also setting a personal offensiveness threshold to be applied to content from the social networking site that is presented to the user. In another example, in a public library, a general public patron's offensiveness threshold may be set to a low threshold, while a librarian may be permitted to set a looser filter via a less restrictive threshold. In a further example, in a massively multiplayer online role playing game (MMORPG), game designers may set a particular tolerance for users to be able to 'verbalize' during game play experience. Language more offensive than that default tolerance will be rejected by an input filter. Players (or parents of players) of the game may also set a particular tolerance for language such that language that makes it 'into the game' may be prevented from being displayed on the player's screen.

The offensive word identifier **104** may also be used to accommodate regional offensiveness standards. For example, some countries with low thresholds for offensive language may prevent citizens from accessing sites on which a crawler finds offensive language. A lower offensiveness threshold may be set for accessers, including crawlers, from those countries so as to not raise offensiveness objections that might result in site prohibition in that country. Users from that country may then be permitted to set a personal threshold lower than the national maximum but not higher. In other configurations, the national offensiveness threshold may be a default user offensiveness threshold, but users may be permitted to adjust their personal threshold higher or lower, as they desire.

The offensive word identifier **104** may also be utilized in offline content. For example, newsletter subscribers may have their personal, paper copies of the newsletter filtered according to their user offensiveness threshold at print time. Similarly, digital books may be delivered to or displayed on a user's device according to the user's personal offensiveness threshold. The offensive word identifier **104** may also be in other environments, such as a text-to-speech implementation. For example, language in a book being digitally spoken via text-to-speech technology may be deleted or modified to prevent the digital speech of words that surpass a user's offensiveness threshold.

An offensive word identifier **104** may increase capability and flexibility of content portals and media by allowing proprietors and/or users to filter offensive language to maintain content standards and to provide content that meets the offensiveness tolerance of a content user. The content management system **104** contains software operations or routines for identifying offender words in a string of words. Users **102** can interact with the offensive word identifier **104** through a number of ways, such as over one or more networks **108**. One or more servers **106** accessible through the network(s) **108** can host the offensive word identifier **104**. The one or more servers **106** are responsive to one or more data stores **110** for providing data to the offensive word identifier **104**. Among the data contained in the one or more data stores **110** may be a collection of offensive words **112** and offensive word severities **114** that facilitate the identification of offender words (e.g., as part of a string of words).

FIG. **2** is a block diagram depicting an offensive word identifier **202** for identifying offensive words in a string of words. A string of one or more words **204** for analysis is provided as input to the offensive word identifier **202**. The offensive word identifier **202** is also responsive to an offensive word list **206** containing a list of words against which the string of one or more words **204** is to be compared. Based on the string of words **204** for analysis and the offensive word list **206**, the offensive word identifier **202** flags any offender words **208** in the string of one or more words **204** for analysis that are considered likely to be offensive.

For example, using a collection of offensive words (e.g., profanity, obscenity, hate-speech, lewdness, sacrilege, blasphemy, subversive etc.) as an offensive word list **206**, which have various "severity" scores assigned to them, the offensive word identifier **202** may determine a distance from a candidate word (in the string of one or more words **204**) to a word on the offensive word list **206**, to identify "how different from a bad word" a word in the string of one or more words **204** is. That difference from a bad word may be used in conjunction with the severity score for the "bad" word, to generate an offensiveness score for the candidate word. If the highest offensiveness score generated in comparing the candidate word to multiple words on the offensive word list **206** is greater than an offensiveness threshold, then the candidate word may be deemed an offender word (e.g., likely offensive to the threshold setter). Such an offensive word identifier **202** may prevent many attempts to circumvent the offensive word identifier **202** through minor adjustments to offensive words (e.g., inserting minor misspellings, utilizing punctuation that looks similar to letters, inserting spaces or punctuation between letters).

The contents of an offensive word list can come from a variety of sources. FIG. **3** is a block diagram depicting example sources of an offensive word list **302** or contributions to words on an offensive word list **302**. For example, an offensive word list **302** may be generated by a site administrator **304**. The site administrator **304** (or other control personnel to whom the site administrator **304** delegates such responsibility) may identify a list of words that he deems offensive (e.g., that should not be permitted to appear on his site), and utilize that list of words as an offensive word list **302** either alone or in conjunction with an offensive word identifier. An offensive word list **302** may also be generated by a user **306** who is to be presented content. The user **306** may

identify words that he does not wish to read while viewing the content, and those identified words may be presented to an offensive word identifier as an offensive word list **302**. The offensive word list **302** may also be provided by a third-party (e.g., someone other than a site administrator **304** or a user **306**). The third party may identify a collection of words that are often deemed offensive. Such a list of words may be provided to an offensive word identifier as an offensive word list **302**. An offensive word list **302** may also be generated by a collaborative effort of site administrators **304**, users **306**, third party providers, and/or others for use with an offensive word identifier. For example, the site administrator may present a 'default' list of words that individual users can customize for their own purposes. In another example, users can share the list of offensive words. In another example, an offensive word list **302** may be created based upon a user's similarity to another group of users for which an offensive word list has been defined.

FIGS. **4**A and **4**B depict example offensive word lists. In the example of FIG. **4**A the offensive word list **402** includes a collection of words deemed offensive along with a severity score associate with each of the words in the offensive word list **402**. The offensive word list **402** may, for example, be stored as a table in a relational database. The severity score may be an indication of how offensive a word is. For example, certain words of four-letters in length are considered more offensive than other terms that some consider offensive. The severity score represents how offensive these words are in comparison to other words. In an implementation that would be relevant for mainstream American culture, the "F-Word" could have the highest score in the database while the word "Tienneman" may not be present in that particular database. In another example for an example that may be relevant for certain communities of Asian culture, the word "Tienneman" would have a very high rating while the "F-Word" may not be present in that particular database.

FIG. **4**B depicts an offensive word list **404** that does not include a severity score for the words on the list. Each word on the offensive word list **404** may be considered globally offensive. In determining an offensiveness score for the words on the offensive word list **404** of FIG. **4**B each of the words on the list may be understood to have an equal severity score, such as 1, and thresholds applied to words being analyzed may be adjusted accordingly.

In addition, either example database may optionally contain a set of transformation functions that allow the system to match variations of the word to its variants. In the case that the database does not contain such transformation functions, a set of transformation functions can optionally be determined dynamically. One example of a transformational function would be a regular expression that treats the character '@' as the character 'a'.

FIG. **5** is a block diagram depicting selected details of an example offensive word identifier **502**. The offensive word identifier **502** receives a string of one or more words **504** for analysis as well as an offensive word list **506**. Candidate words may be identified from a string of one or more words for analysis **504** in a variety of ways. For example, tokens of characters between spaces or punctuations may be identified as candidate words or phrases for analysis by an offensive word identifier **502**. Additionally, spaces and punctuations may be removed from a string of words **504** for analysis, and groups of different lengths of the remaining characters may be provided to the offensive word identifier **502** as candidate words **510**, shifting one character to the right in the string of one or more words **504** after a number of lengths of candidate words have been provided as candidate words **510** at the current position in the string of one or more words **504**. A transformation function **513** may be applied to a candidate word **510** to identify alternative candidate words that may be hidden in the string of one or more words **504**. For example, all "@" symbols in a candidate word may be transformed to "a"s based on their similar appearance. A distance calculation **508** is then performed between a candidate word **510** (or transformed candidate word) in the string of words **504** for analysis and each word **512** in the offensive word list **506**.

For example, the distance calculation may utilize a Levenshtein distance calculation. A Levenshtein distance may be implemented by the following code:

```
private double computeWordDistance(String s, String t) {
   int n = s.length( );
   int m = t.length( );
   if (n == 0) {
      return m;
   }
   if (m == 0) {
      return n;
   }
   int[ ][ ] d = new int[n + 1][m + 1];
   for (int i = 0; i <= n; d[i][0] = i++) {
      ;
      }
      for (int j = 1; j <= m; d[0][j] = j++) {
         ;
      }
      for (int i = 1; i <= n; i++) {
         char sc = s.charAt(i−1);
         for (int j = 1; j <= m; j++) {
               int v = d[i−1][j−1];
               if (t.charAt(j−1) != sc) {
                  v++;
               }
               d[i][j] =
                  Math.min(
                     Math.min(d[i−1][j]+1, d[i][j−1]+1),
                     v
                  );
            }
      }
      return d[n][m];
   }
```

As an example, assume the word merde is associated with a severity score of ten. Using an offensive word list alone, the words m.e.r.d.e and m3rcl3 may be missed if those variants of the word do not appear in the offensive word list **506**. However, to include all variants of every potentially offensive word, the offensive word list **506** would need to be extremely large. In some implementations, a shorter offensive word list **506** can be maintained if a distance calculation **508** is utilized. In these implementations, filler text, such as spaces and punctuation, may be removed from candidate text prior to executing a distance calculation. In other implementations, an optional transformation function can be used to mark the letters at the beginning and end of the string as the boundaries for a possible 'offensive word' match. In each of these implementations, a distance calculation, such as the function noted above, may then be executed. Inputting the offensive word list member merde and the candidate word m3rcl3 into the above function returns a value of 4, based on four transformations being necessary to transform m3rcl3 to merde (e.g., "3" to "e", "c" to "d", "1" is removed and "3" to "e").

In some implementations, other distance calculation processes may also be implemented as the distance calculation **508**. For example, the distance calculation **508** may be a Hamming Distance, a Damerau-Levenshtein Distance, a Dice coefficient, a Jaro-Winkler distance, or other measurement.

The distance calculation **508** can output a distance **514** of the candidate word **510** in the string of words **504** from a word **512** in the offensive word list **506**. The distance **514** from the offensive word and the severity score **516** for the offensive word are input into an offensiveness score calculation **518** that outputs an offensiveness score for the candidate word based upon one word in the offensive word list **506**. The distance calculation **508** and the offensiveness score calculation **518** may be repeated to identify an offensiveness score for the candidate word **510** for each word in the offensive word list **506**. The maximum offensiveness score **520** calculated for the candidate word **510** is compared to an offensiveness threshold at **522**. If the maximum offensiveness score **520** identifies the candidate word **510** as being more offensive than the offensiveness threshold, then the candidate word **510** is flagged as being an offender word **524**. While an offender word is often referred to herein as having an offensiveness score greater than an offensiveness threshold, it is understood that some embodiments may identify a candidate word as an offender word where the offensiveness score for the candidate word is less than an offensiveness threshold value.

An offensiveness threshold is representative of a person's sensitivity to sensitive language, wherein if a word's offensiveness score exceeds an offensiveness threshold, then that word is likely to be considered offensive by the person with which the offensiveness threshold is associated. Alternatively, words that do not exceed an offensiveness threshold are likely not offensive to a person with which the offensiveness threshold is associated. For example, if a user has a tolerance for "moderate swearing," the direct presentation of one of these most offensive four-letter words would be flagged by the offensive word identifier. One example would be the use of a particular four letter word, beginning with the letter 'f', in mainstream American culture. In this example, if the word "frick" is input to the system instead, while the "idea" behind the word is still a strong severity word, the word distance from the actual four-letter word is far, thus the word "frick" may not be identified as an offender word. Additionally, for a user that has a preference for zero swearing, the word "frick" would have a score that is above the user offensive word tolerance and would be flagged as an offender word.

FIG. **6** is a block diagram depicting an offensive word identifier **602** that utilizes a Levenshtein distance calculation. The offensive word identifier **602** receives a string of one or more words **604** for analysis and is also responsive to an offensive word list **606**. The offensive word identifier **602** compares a candidate word **608** in the string of words **604** to each word **610** in the offensive word list **606** using a Levenshtein distance calculation **612**. The calculated distance from the current offensive word along with the severity score **616** of the current offensive word are inputs to an offensiveness score calculation **618**. For example, an offensiveness score may be calculated as:

$$\text{Score}=A*((B-C)/B),$$

where A is the severity score for the current offensive word **610** in the offensive word list **606**, B is the length of the offensive word **610**, and C is the calculated distance **614** between the candidate word **608** and the current offensive word **610**.

For example, in the above example where the word merde had a severity score of 10 and a length of 5, and the calculated Levenshtein distance between merde and m3rcl3 is 4, the above formula is populated as follows:

$$\text{Score}=10*((5-4)/5)=2.$$

The maximum offensiveness score **620** obtained via comparisons and calculations utilizing the candidate word **608** and each of the words **610** in the offensive word list **606** is compared to a threshold value at **622** to determine if the candidate word **608** is to be flagged as an offender word **624**. Thus, if the word, merde, scored the highest offensiveness score of 2 for the string, m3rcl3, then the offensive word identifier **602** would flag the string, m3rcl3, as being an offender word if the offensive threshold being applied is less than (or, in some embodiments, equal to) 2. Thresholds may be set to range between the lowest and highest severity scores found in the offensive word list **606** (e.g., from 0 to 10) or to other values outside of that range. Using a scale of 0 to 10, an offensiveness threshold of 3 may be set by a person who has a low tolerance for offensive language, while a person having a higher tolerance may use an offensiveness threshold of 8. Variations in thresholds utilized may vary according to severity scores used (or the lack of the use of severity scores), the offensiveness score calculation method utilized, as well as other factors

Other offensiveness score calculations may be utilized by an offensive word identifier **602**. For example, if a similarity metric, such as a Jaro-Winkler distance or Sørensen similarity index is used instead of a distance metric in the distance calculation, then an offensiveness score calculation may be calculated according to an inverse distance calculation (using a safe assumption of a non-zero value for the word similarity):

$$\text{Score}=A*((B-(1/C))/B),$$

where A is the severity score for an offensive word in the plurality of offensive words, where B is a function of a length of the offensive word (where that function could be the length of the offensive word itself), and where C is the calculated distance between the candidate word and the offensive word.

For example, in the above example where the word merde had a severity score of 10 and a length of 5, and the calculated Sørensen similarity index between merde and m3rcl3 is approximately 0.44, the above formula is populated as follows:

$$\text{Score}=10*((5-(1/0.44))/5)=4.5 \text{ (rounded to one significant digit).}$$

In this example as in the previous example, the range of possible calculated values is unbounded since the value of the word severity is unbounded, but the site administrator can define an appropriate scale that accounts for the site's particular needs. It must be noted that although this algorithm requires a non-zero value for the similarity score, this is a practical restriction as a candidate word or phrase would conditionally have some similarity to the root offensive word in order to trigger the analysis in the first place.

An offensiveness score calculation may also be performed such that a score is not normalized with the length of the word from the offensive word list **606** as:

$$\text{Score}=\text{Max}(((A-C)/A),0)$$

For example, in the above example where the word merde had a severity score of 10 and a length of 5 and the calculated Levenshtein distance between merde and m3rcl3 is 4, the formula is populated as follows:

$$\text{Score}=\text{Max}(((10-4)/10),0)=\text{Max}((6/10),0)=0.6$$

In this example, the value of the particular calculation based on the example underlying algorithms will always be in the range of [0.1] and so the threshold scale should accommodate this range.

As a further example, in a scenario where the offensive word list **606** does not include a severity score with each entry

or where each entry has the same severity score, the offensiveness threshold may be adjusted (e.g., the offensiveness threshold may be set between 0 and 1 if all words in the offensive word list **606** are considered to have a severity of 1), such that a word is flagged according to:

$$\text{'offensive'}=(((B-C)/B)>T),$$

where T is the offensiveness threshold.

For example, in the above example where the word merde appears in the word database and has a length of 5 and the calculated Levenshtein distance between merde and m3rcl3 is 4, the formula is populated as follows

$$((5-4)/5)=0.2$$

In this example, any threshold which defines a word as offensive in the event the score is equal to or greater than 0.2 would mark the word m3rcl3 as offensive. Again, the value of the particular calculation based on the example underlying algorithms will always be in the range of [0.1] and so the threshold scale should accommodate this range.

FIG. **7** is a block diagram depicting an offensive word identifier **702** being utilized as an input filter. The offensive word filter **702** receives a user input string **704**. For example, the user input string **704** may be a submitted post to a message board. The offensive word identifier **702** is also responsive to an offensive word list **706**. A candidate word **708** in the user input string **704** is compared to a word **710** in the offensive word list **706** via a distance calculation **712**. The distance of the candidate word **708** from the word **710** in the offensive word list **706** is output at **714**, which becomes an input, along with the severity score **716** of the current word **710** from the offensive word list **706** to an offensiveness score calculation **718**. The maximum offensiveness score **720** calculated at **718**, is based upon comparisons of the candidate word **708** and each word **710** in the offensive word list **706**. The maximum offensiveness score **720** is compared to an offensiveness threshold at **722**. User input **704** (e.g., a word in the user input string **704**), may be rejected at **724** if a word in the user input string **704** is identified as an offender word (e.g., exceeds the maximum offensiveness score **720**).

FIG. **8** is a block diagram depicting an offensive word identifier **802** being utilized as an output filter. The offensive word filter **802** receives a candidate output to a user system **804**. For example, the candidate output to the user system **804** may be a message board post requested by a user for display. The offensive word identifier **802** is also responsive to an offensive word list **806**. A candidate word **808** in the candidate output to a user system **804** is compared to a word **810** in the offensive word list **806** via a distance calculation **812**. The distance of the candidate word **808** from the word **810** in the offensive word list **806** is output at **814**. This output is then input, along with the severity score **816** of the current word **810** from the offensive word list **806**, to an offensiveness score calculation **818**. The maximum offensiveness score **820** calculated at **818**, is based upon comparisons of the candidate word **808** and each word **810** in the offensive word list **806**. The maximum offensiveness score **820** is compared to an offensiveness threshold at **822**. Candidate output to the user system **804** may be modified at **824** (e.g., such as via the use of symbols to censor an offender word), if a word in the candidate output to a user system **804** is identified as an offender word (e.g., exceeds an offensiveness threshold **822**).

FIG. **9** is a block diagram depicting the identification of words to be included on an offensive word list **902**. As noted above, different people have different tolerances for offensive language, and different types of offensive language may affect people differently. For example, while slang terms may offend certain persons, those slang terms may be perfectly acceptable to another. To accommodate these differences, a custom offensive word list **902** may be generated. For example, offensive words may be segregated into one or more categories represented on sub-lists **904**, **906**, **908**. For example, sub-list **1 904** may contain words that are considered racially offensive, sub-list **2 906** may contain words that are considered sexually offensive, and sub-list **3 908** may contain slang terms that are considered offensive. Offensive word list generator **910** may receive an identification of categories of words **912** that a person considers offensive. Those categories **912** that the person identifies as being offensive may be included on the offensive word list **902**, while those sub-lists containing non-identified categories may not be included on the offensive word list **902**.

FIG. **10** is an example user interface **1000** where a user can select categories of words that the user considers offensive. These selected offensive words can be used to generate an offensive word list and select an offensiveness threshold value. The example user interface **1000** includes an account preferences portion **1001**. A first control at **1003** enables the selection of an option describing how tolerant of "strong language" the user is. This selection may be utilized in setting an offensiveness threshold for the user. For example, in a system using offensiveness thresholds from 0-10, a selection of "Do not allow strong language" may result in an offensiveness threshold of 1 being set for the user, a selection of "I tolerate moderate language" may result in an offensiveness threshold of 4 being set for the user, and a selection of "I am receptive to strong language" may result in an offensiveness threshold of 8 being set for the user. The account preferences **1001** also include a control for selecting what classes of strong language should be filtered at **1004**. For example, control **1004** can list categories of: Swearing, Slang, Racial Slurs, Youth Oriented, Alcohol Related, Drug Related, Religion Related. Each of these categories may correspond to a sub-list as described with respect to FIG. **9**. The system could also include a "user-defined" sub-for selection and population whereby a user could input words that he personally finds offensive that could be incorporated into an offensive word list. When a user saves his settings, a personalized offensive word list may be constructed that includes words from each of the sub-lists containing a category of words selected in control **1004**.

FIG. **11** is a block diagram depicting an offensive word identifier **1102** that utilizes a user location threshold maximum **1104** in setting a threshold for flagging offender words. The offensive word filter **1102** receives a string of one or more words **1106** for analysis. The offensive word identifier **1102** is also responsive to an offensive word list **1108**. A candidate word **1110** in the string of one or more words **1106** for analysis is compared to a word **1112** in the offensive word list **1108** via a distance calculation **1114**. The distance of the candidate word **1110** from the word **1112** in the offensive word list **1108** is output at **1116**. This output becomes an input, along with the severity score **1118** of the current word **1112** from the offensive word list **1108**, to an offensiveness score calculation **1120**. The maximum offensiveness score **1122** calculated at **1120** is based upon comparisons of the candidate word **1110** and each word **1112** in the offensive word list **1108**. The maximum offensiveness score **1122** is compared to an offensiveness threshold at **1124**. That offensiveness threshold may be set based on a user location threshold maximum **1104**.

For example, in a certain country, a user location threshold maximum **1104** may be set in accordance with local standards for decency such that a person cannot set a user offensiveness

tolerance greater than the user location threshold maximum **1104**. In some implementations, the user may be permitted to set a more restrictive threshold than the user location threshold maximum **1104** via a user tolerance indication **1126**. In another implementation, a user location threshold may be set as a default threshold for a user in that location. The user may then be free to set a higher or lower personal offensiveness threshold via a user tolerance indication **1126** (e.g., based upon the personal offensiveness tolerance of the user). If a candidate word **1110** has a maximum offensiveness score **1122** that is greater than the set threshold (e.g., at the user location), then the candidate word **1110** may be flagged as an offender word at **1128**.

An offensive word identifier **1102** may also enable customized offensiveness thresholds and offensive word lists **1108** based on a user's location. For example, if a geographical region has a first offensive word list associated with the region and a user has a personal offensive word list associated with him, the offensive word identifier **1102** may utilize the union or intersection of the region offensive word list and the user offensive word list as the offensive word list **1108** in analyzing a string of one or more words. Additionally, different offensiveness thresholds may be utilized based on a user's location. For example, a lower offensiveness threshold may be utilized on a TV set-top box in a common family area, such as a living room, while a higher offensiveness threshold may be utilized on a set-top box in a parent's bedroom.

FIG. **12** depicts an example user interface **1200** wherein an offensive word identifier may be utilized as an input filter. The user interface **1200** includes a media portal for a content review portal that includes an interface for watching video media **1201**, as well as a link **1203** to a form **1205** for entering a user review of the content that is viewable in the media player interface **1201**. Upon drafting and submitting a user review via the review form **1205**, an offensive word identifier may review the submitted review text. If any words in the submitted review text are flagged by the offensive word identifier (e.g., the words have a calculated offensiveness score greater than the site or category offensiveness threshold identified by the proprietor of the site), then the submitted review text may be rejected or modified to mitigate the offensiveness. Additionally, the submitting user may be notified of the rejection or modification of his posting.

FIG. **13** depicts an example user interface **1300** wherein an offensive word identifier may be utilized as an output filter. The user interface **1300** includes a media portal that includes an interface for watching video media **1301**, as well as a link **1303** to an interface **1305** for reading user reviews of the content that is viewable in the media player interface **1301**. Upon selection of the link **1303** to access reviews, an offensive word identifier may review the content of the reviews to be presented to the user at **1305**. If any words in the reviews to be presented are flagged by the offensive word identifier (e.g., the words have a calculated offensiveness score that identifies the words as being more offensive than the offensiveness threshold identified by the user), then those reviews may not be presented to the user. Additionally, the flagged offensive words may be censored, or other mitigation actions may be taken to minimize offending of the user.

FIG. **14** is a flow diagram depicting a method **1400** of identifying offender words in a string of words. At **1402**, a plurality of offensive words are received using one or more processors, wherein each offensive word in the plurality of offensive words is associated with a severity score identifying the offensiveness of that word. At **1404**, a string of words is received, wherein a candidate word is selected from the string of words, and at **1406**, a distance between the candidate word and each offensive word in the plurality of offensive words is calculated. At **1408**, an offensiveness score is calculated for each offensive word in the plurality of offensive words and the candidate word based upon the calculated distance and the severity score, thereby calculating a plurality of offensiveness scores. At **1412**, a determination is made as to whether the candidate word is an offender word, wherein the candidate word is deemed to be an offender word when the highest offensiveness score in the plurality of offensiveness scores exceeds the offensiveness threshold value.

Embodiments of the subject matter and the functional operations described in this specification can be implemented in digital electronic circuitry, or in computer software, firmware, or hardware, including the structures disclosed in this specification and their structural equivalents, or in combinations of one or more of them. Embodiments of the subject matter described in this specification can be implemented as one or more computer program products, i.e., one or more modules of computer program instructions encoded on a computer readable medium for execution by, or to control the operation of, data processing apparatus.

The computer readable medium can be a machine readable storage device, a machine readable storage substrate, a memory device, a composition of matter effecting a machine readable propagated signal, or a combination of one or more of them. The term "data processing apparatus" encompasses all apparatus, devices, and machines for processing data, including by way of example a programmable processor, a computer, or multiple processors or computers. The apparatus can include, in addition to hardware, code that creates an execution environment for the computer program in question, e.g., code that constitutes processor firmware, a protocol stack, a database management system, an operating system, or a combination of one or more of them, A propagated signal is an artificially generated signal, e.g., a machine generated electrical, optical, or electromagnetic signal, that is generated to encode information for transmission to suitable receiver apparatus.

A computer program (also known as a program, software, software application, script, or code), can be written in any form of programming language, including compiled or interpreted languages, and it can be deployed in any form, including as a stand alone program or as a module, component, subroutine, or other unit suitable for use in a computing environment. A computer program does not necessarily correspond to a file in a file system. A program can be stored in a portion of a file that holds other programs or data (e.g., on or more scripts stored in a markup language document), in a single file dedicated to the program in question, or in multiple coordinated files (e.g., files that store one or more modules, sub programs, or portions of code). A computer program can be deployed to be executed on one computer or on multiple computers that are located at one site or distributed across multiple sites and interconnected by a communication network.

The processes and logic flows described in this specification can be performed by one or more programmable processors executing one or more computer programs to perform functions by operating on input data and generating output. The processes and logic flows can also be performed by, and apparatus can also be implemented as, special purpose logic circuitry, e.g., an FPGA (field programmable gate array) or an ASIC (application specific integrated circuit). Processors suitable for the execution of a computer program include, by way of example, both general and special purpose microprocessors, and any one or more processors of any kind of digital computer. Generally, a processor will receive instructions and

data from a read only memory or a random access memory or both. The essential elements of a computer are a processor for performing instructions and one or more memory devices for storing instructions and data.

Generally, a computer will also include, or be operatively coupled to receive data from or transfer data to, or both, one or more mass storage devices for storing data, e.g., magnetic, magneto optical disks, or optical disks. However, a computer need not have such devices. Moreover, a computer can be embedded in another device, e.g., a mobile telephone, a personal digital assistant (PDA), a mobile audio player, a Global Positioning System (GPS) receiver, to name just a few. Computer readable media suitable for storing computer program instructions and data include all forms of nonvolatile memory, media, and memory devices, including by way of example semiconductor memory devices, e.g., EPROM, EEPROM, and flash memory devices; magnetic disks, e.g., internal hard disks or removable disks; magneto optical disks; and CD ROM and DVD ROM disks. The processor and the memory can be supplemented by, or incorporated in, special purpose logic circuitry.

To provide for interaction with a user, embodiments of the subject matter described in this specification can be implemented on a computer having a display device, e.g., a CRT (cathode ray tube) to LCD (liquid crystal display) monitor, for displaying information to the user and a keyboard and a pointing device, e.g., a mouse or a trackball, by which the user can provide input to the computer. Other kinds of devices can be used to provide for interaction with a user as well; for example, feedback provided to the user can be any form of sensory feedback, e.g., visual feedback, auditory feedback, or tactile feedback; and input from the user can be received in any from, including acoustic, speech, or tactile input.

Embodiments of the subject matter described in this specification can be implemented in a computing system that includes a back end component, e.g., as a data server, or that includes a middleware component, e.g., an application server, or that includes a front end component, e.g., a client computer having a graphical user interface or a Web browser through which a user can interact with an implementation of the subject matter described in this specification, or any combination of one or more such back end, middleware, or front end components. The components of the system can be interconnected by any form or medium of digital data communication, e.g., a communication network. Examples of communication networks include a local area network ("LAN") and a wide area network ("WAN"), e.g., the Internet.

The computing system can include clients and servers. A client and server are generally remote from each other and typically interact through a communication network. The relationship of client and server arises by virtue of computer programs running on the respective computers and having a client server relationship to each other.

In some implementations, an insider can be any third-party who exhibits an interest in one or more of the following: processing, marketing, promotion, management, packaging, merchandising, fulfillment, delivery, distribution, licensing, or enforcement of content and/or content-related data. In some implementations, an insider can be considered a content provider. A content provider is anyone who exhibits an interest in distributing, licensing, and/or sub-licensing content and/or content-related data. A content provider can include, but is not limited to, a distributor, a sub-distributor, and a licensee of content and/or content-related data. In some implementations, a content provider can perform any and all functions associated with the systems and methods provided herein. It should be understood, that any and all functions performed by a content creator can also be performed by a content provider.

While this specification contains many specifics, these should not be construed as limitations on the scope of the invention or of what may be claimed, but rather as descriptions of features specific to particular embodiments of the invention. Certain features that are described in this specification in the context or separate embodiments can also be implemented in combination in a single embodiment. Conversely, various features that are described in the context of a single embodiment can also be implemented in multiple embodiments separately or in any suitable subcombination. Moreover, although features may be described above as acting in certain combinations and even initially claimed as such, one or more features from a claimed combination can in some cases be excised from the combination, and the claimed combination may be directed to a subcombination or variation of a subcombination.

Similarly, while operations are depicted in the drawings in a particular order, this should not be understood as requiring that such operations be performed in the particular order shown or in sequential order, or that all illustrated operations be performed, to achieve desirable results. In certain circumstances, multitasking and parallel processing may be advantageous. Moreover, the separation of various system components in the embodiments described above should not be understood as requiring such separation in all embodiments, and it should be understood that the described program components and systems can generally be integrated together in a single software product or packaged into multiple software products.

Thus, particular embodiments of the invention have been described. Other embodiments are within the scope of the following claims. For example, the actions recited in the claims can be performed in a different order and still achieve desirable results.

It is claimed:

1. A method, comprising:

receiving, using one or more data processors, a first plurality of offensive words and storing the first plurality of offensive words in a computer-readable medium;

receiving, using one or more data processors, a second plurality of offensive words and storing the second plurality of words in the computer-readable medium;

receiving a string of words, wherein one or more detected offensive words is selected from the string of words that matches words from the first plurality of offensive words or the second plurality of offensive words; and

processing the string of words based upon the detection of offensive words in the string of words, wherein processing the string of words includes storing the one or more detected offensive words in the computer-readable medium;

wherein each offensive word in the first plurality of offensive words is associated with a first severity score identifying offensiveness of that word;

wherein each offensive word in the second plurality of offensive words is associated with a second severity score identifying offensiveness of that word;

wherein an offensive word appearing in both the first plurality of offensive words and the second plurality of offensive words has an adjusted severity score based on the offensive word's first severity score and second severity score;

wherein detection of a particular offensive word from the string of words is based upon a greatest of any first

severity score, second severity score, and adjusted severity score associated with the particular offensive word;

wherein detection of the particular offensive word is based upon the greatest of the severity scores associated with the particular offensive word exceeding an offensiveness threshold value.

2. The method of claim **1**, wherein each word in the first plurality of words, each word in the second plurality of words and each word in the string of words comprises an abbreviation, a single word, a phrase, or a sentence.

3. The method of claim **1**, wherein the first plurality of offensive words and the second plurality of offensive words are wholly unique and independent of one another, or comprise a joined subset where some words appear in both the first plurality of offensive words and the second plurality of offensive words concurrently.

4. The method of claim **1**, wherein the first plurality of offensive words is provided by a first source and the second plurality of offensive words is provided by a second source, wherein the first source is different than the second source.

5. The method of claim **4**, wherein the first source or the second source comprises a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated or any combination thereof.

6. The method of claim **1**, wherein the severity score of words in each plurality of offensive words is provided by a different source.

7. The method of claim **6**, wherein the source of the severity scores of words in the first plurality of offensive words or the second plurality of offensive words is a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated, or any combination thereof.

8. The method of claim **1**, wherein the greatest offensiveness score is one of:

a smallest value offensiveness score calculated in comparing each of the plurality of offensive words with a candidate word from the string of words; or

a largest value offensiveness score calculated in comparing each of the plurality of offensive words with a candidate word from the string of words.

9. The method of claim **1**, wherein the offensiveness threshold value is a value set by a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated, or any combination thereof.

10. The method of claim **1**, wherein the offensiveness threshold value is derived using a function that is computed using values provided by a user, a service administrator, a third party, a government institution having jurisdictional authority over a user, a non-governmental institution with which the user is associated, or any combination thereof.

11. The method of claim **1**, wherein the string of words is input from a user to a service; and

the input from the user to the service is rejected if an offensive word is detected in the string of words.

12. The method of claim **1**, wherein the string of words is output to a user from a service; and

the output to the user is modified if an offensive word is detected in the string of words.

13. The method of claim **12**, wherein modification of the output comprises one of the group consisting of:

deleting the string of words such that the string of words is not displayed to the user;

deleting the offensive word from the string of words such that the offensive words within the string of words is not displayed to the user;

censoring the string of words such that the string of words is not displayed to the user; and

censoring the offensive word from the string of words such that the offensive words within the string of words is not displayed to the user.

14. The method of claim **1**, wherein the string of words is input from an input user to a service and output to an output user from the service;

wherein the input from the user is rejected if an offensive word is detected that matches an offensive word within the first plurality of offensive words; and

the output to the second user is modified if an offensive word is detected that matches an offensive word in within the second plurality of offensive words.

15. The method of claim **14**, wherein the input user and the output user are different users or the same user.

16. A system, comprising:

a data processor;

a computer-readable memory encoded with instructions for commanding the data processor to perform steps including:

receiving, using one or more processors, a first plurality of offensive words;

receiving, using one or more processors, a second plurality of offensive words;

receiving a string of words, wherein one or more detected offensive words is selected from the string of words that matches words from the first plurality of offensive words or the second plurality of offensive words; and

processing the string of words based upon the detection of offensive words in the string of words;

wherein each offensive word in the first plurality of offensive words is associated with a first severity score identifying offensiveness of that word;

wherein each offensive word in the second plurality of offensive words is associated with a second severity score identifying offensiveness of that word;

wherein an offensive word appearing in both the first plurality of offensive words and the second plurality of offensive words has an adjusted severity score based on the offensive word's first severity score and second severity score;

wherein detection of a particular offensive word from the string of words is based upon a greatest of any first severity score, second severity score, and adjusted severity score associated with the particular offensive word;

wherein detection of the particular offensive word is based upon the greatest of the severity scores associated with the particular offensive word exceeding an offensiveness threshold value.

17. The system of claim **16**, wherein each word in the first plurality of words, each word in the second plurality of words and each word in the string of words comprises an abbreviation, a single word, a phrase, or a sentence.

18. The system of claim **16**, wherein the first plurality of offensive words and the second plurality of offensive words are wholly unique and independent of one another, or comprise a joined subset where some words appear in both the first plurality of offensive words and the second plurality of offensive words concurrently.

19. The system of claim **16**, wherein the first plurality of offensive words is provided by a first source and the second

plurality of offensive words is provided by a second source, wherein the first source is different than the second source.

20. The system of claim **19**, wherein the first source or the second source comprises a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated or any combination thereof.

21. The system of claim **16**, wherein the severity score of words in each plurality of offensive words is provided by a different source.

22. The system of claim **21**, wherein the source of the severity scores of words in the first plurality of offensive words or the second plurality of offensive words is a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated, or any combination thereof.

23. The system of claim **16**, wherein the greatest offensiveness score is one of:

a smallest value offensiveness score calculated in comparing each of the plurality of offensive words with a candidate word from the string of words; or

a largest value offensiveness score calculated in comparing each of the plurality of offensive words with a candidate word from the string of words.

24. The system of claim **16**, wherein the offensiveness threshold value is a value set by a user, a service administrator, a third party, a government institution having jurisdictional authority for a user, a non-governmental institution with which the user is associated, or any combination thereof.

25. The system of claim **16**, wherein the offensiveness threshold value is derived using a function that is computed using values provided by a user, a service administrator, a third party, a government institution having jurisdictional authority over a user, a non-governmental institution with which the user is associated, or any combination thereof.

26. The system of claim **16**, wherein the string of words is input from a user to a service; and

the input from the user to the service is rejected if an offensive word is detected in the string of words.

27. The system of claim **16**, wherein the string of words is output to a user from a service; and

the output to the user is modified if an offensive word is detected in the string of words.

28. The system of claim **27**, wherein modification of the output comprises one of the group consisting of:

deleting the string of words such that the string of words is not displayed to the user;

deleting the offensive word from the string of words such that the offensive words within the string of words is not displayed to the user;

censoring the string of words such that the string of words is not displayed to the user; and

censoring the offensive word from the string of words such that the offensive words within the string of words is not displayed to the user.

29. The system of claim **16**, wherein the string of words is input from an input user to a service and output to an output user from the service;

wherein the input from the user is rejected if an offensive word is detected that matches an offensive word within the first plurality of offensive words; and

the output to the second user is modified if an offensive word is detected that matches an offensive word in within the second plurality of offensive words.

30. The system of claim **29**, wherein the input user and the output user are different users or the same user.

31. One or more non-transitory computer-readable mediums encoded with instructions for commanding one or more data processors to execute steps comprising:

receiving, using one or more processors, a first plurality of offensive words;

receiving, using one or more processors, a second plurality of offensive words;

receiving a string of words, wherein one or more detected offensive words is selected from the string of words that matches words from the first plurality of offensive words or the second plurality of offensive words; and

processing the string of words based upon the detection of offensive words in the string of words;

wherein each offensive word in the first plurality of offensive words is associated with a first severity score identifying offensiveness of that word;

wherein each offensive word in the second plurality of offensive words is associated with a second severity score identifying offensiveness of that word;

wherein an offensive word appearing in both the first plurality of offensive words and the second plurality of offensive words has an adjusted severity score based on the offensive word's first severity score and second severity score;

wherein detection of a particular offensive word from the string of words is based upon a greatest of any first severity score, second severity score, and adjusted severity score associated with the particular offensive word;

wherein detection of the particular offensive word is based upon the greatest of the severity scores associated with the particular offensive word exceeding an offensiveness threshold value.

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